

No.	Publication No.	Title
1.	<u>2002 - 269139</u>	METHOD FOR RETRIEVING DOCUMENT
2.	<u>2002 - 268677</u>	STATISTICAL LANGUAGE MODEL GENERATING DEVICE AND VOICE RECOGNITION DEVICE
3.	<u>2002 - 268676</u>	LANGUAGE MODEL GENERATING DEVICE AND VOICE RECOGNITION DEVICE
4.	<u>2002 - 259385</u>	DEVICE, METHOD AND PROGRAM FOR RETRIEVING DOCUMENT AND RECORDING MEDIUM
5.	<u>2002 - 221985</u>	VOICE RECOGNITION DEVICE, MORPHEME ANALYZER, KANA (JAPANESE SYLLABARY)/KANJI (CHINESE CHARACTER) CONVERTER, ITS METHOD AND RECORDING MEDIUM WHICH RECORDS ITS PROGRAM
6.	<u>2002 - 140094</u>	DEVICE AND METHOD FOR VOICE RECOGNITION, AND COMPUTER- READABLE RECORDING MEDIUM WITH VOICE RECOGNIZING PROGRAM RECORDED THEREON
7.	<u>2002 - 091967</u>	LANGUAGE MODEL PREPARING DEVICE AND RECORDING MEDIUM WITH LANGUAGE MODEL PREPARATION PROGRAM RECORDED THEREON
8.	<u>2001 - 312294</u>	LEARNING METHOD OF TRANSDUCER TRANSDUCING INPUT SYMBOL SERIES INTO OUTPUT SYMBOL SERIES, AND COMPUTER-READABLE RECORDING MEDIUM WITH STORED LEARNING PROGRAM OF TRANSDUCER
9.	<u>2001 - 236089</u>	STATISTICAL LANGUAGE MODEL GENERATING DEVICE, SPEECH RECOGNITION DEVICE, INFORMATION RETRIEVAL PROCESSOR AND KANA/KANJI CONVERTER
10.	<u>2001 - 188557</u>	METHOD FOR GENERATING MAXIMUM ENTROPY VOICE MODEL
11.	<u>2001 - 092489</u>	CONTINUOUS VOICE RECOGNITION DEVICE
12.	<u>2001 - 092488</u>	STATISTICAL LANGUAGE MODEL CREATING DEVICE AND SPEECH RECOGNITION DEVICE
13.	<u>2000 - 356997</u>	STATISTICAL LANGUAGE MODEL GENERATOR AND VOICE RECOGNITION DEVICE
14.	<u>2000 - 353962</u>	METHOD FOR EXTRACTING INFORMATION FROM SYMBOLIC COMPRESSED DOCUMENT PICTURE
15.	<u>2000 - 347687</u>	DEVICE/METHOD FOR RECOGNIZING VOICE, FOR ANALYSING FORM ELEMENT, FOR CONVERTING KANA/KANJI, RECORD MEDIUM RECORDING VOICE RECOGNITION PROGRAM AND FORM ELEMENT ANALYSING PROGRAM, AND KANA/KANJI CONVERSION PROGRAM
16.	<u>2000 - 250581</u>	LANGUAGE MODEL GENERATING DEVICE AND VOICE RECOGNITION DEVICE
17.	<u>2000 - 231563</u>	DOCUMENT RETRIEVING METHOD AND ITS SYSTEM AND COMPUTER READABLE RECORDING MEDIUM FOR RECORDING DOCUMENT RETRIEVAL PROGRAM
18.	<u>2000 - 207404</u>	METHOD AND DEVICE FOR RETRIEVING DOCUMENT AND RECORD MEDIUM
19.	<u>2000 - 194696</u>	AUTOMATIC IDENTIFICATION METHOD FOR KEY LANGUAGE OF SAMPLE TEXT
20.	<u>2000 - 099085</u>	STATISTICAL LANGUAGE MODEL GENERATING DEVICE AND VOICE RECOGNITION DEVICE
21.	<u>2000 - 099082</u>	VOICE RECOGNITION DEVICE
22.	<u>2000 - 075885</u>	VOICE RECOGNITION DEVICE
23.	<u>2000 - 057151</u>	DOCUMENT RETRIEVING METHOD, ITS EXECUTING DEVICE AND MEDIUM RECORDING ITS PROCESSING PROGRAM

24.	<u>2000 - 010588</u>	METHOD AND DEVICE FOR RECOGNIZING VOICE
25.	<u>11 - 328316(1999)</u>	DEVICE AND METHOD FOR CHARACTER RECOGNITION AND STORAGE MEDIUM
26.	<u>11 - 296515(1999)</u>	LANGUAGE MODEL APPROXIMATION LEARNING DEVICE, ITS METHOD AND STORAGE MEDIUM RECORDING APPROXIMATION LEARNING PROGRAM
27.	<u>11 - 272702(1999)</u>	AUTOMATIC CHARACTER STRING CLASSIFICATION DEVICE, METHOD THEREFOR AND MEDIUM RECORDING CONTROL PROGRAM THEREFOR
28.	<u>11 - 184866(1999)</u>	NATURAL LANGUAGE STATISTIC DATA BASE DEVICE
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31.	<u>11 - 143877(1999)</u>	COMPRESSION METHOD, METHOD FOR COMPRESSING ENTRY INDEX DATA AND MACHINE TRANSLATION SYSTEM
32.	<u>11 - 085184(1999)</u>	SPEECH RECOGNITION DEVICE
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34.	<u>09 - 231321(1997)</u>	INFORMATION PROCESSING METHOD AND ITS DEVICE
35.	<u>09 - 134192(1997)</u>	STATISTICAL LANGUAGE MODEL FORMING DEVICE AND SPEECH RECOGNITION DEVICE
36.	<u>08 - 320873(1996)</u>	METHOD AND DEVICE FOR AUTOMATIC KEY WORD EXTRACTION
37.	<u>08 - 241096(1996)</u>	SPEECH RECOGNITION METHOD
38.	<u>08 - 161340(1996)</u>	AUTOMATIC COMPOUND WORD EXTRACTION DEVICE
39.	<u>08 - 041004(1996)</u>	5-(SULFAMOYL/CARBAMOYLMETHYL)-CYCLOHEXENONE OXIME ETHER AND ITS HERBICIDAL USE
40.	<u>07 - 025857(1995)</u>	CONDENSED HETEROCYCLIC DERIVATIVE AND HERBICIDE
41.	<u>06 - 342298(1994)</u>	SPEECH RECOGNITION SYSTEM
42.	<u>06 - 318096(1994)</u>	METHOD FOR FORMING LANGUAGE MODELING SYSTEM
43.	<u>06 - 110493(1994)</u>	METHOD FOR CONSTITUTING SPEECH MODEL AND SPEECH RECOGNITION DEVICE
44.	<u>05 - 250405(1993)</u>	SYNTAX ANALYZING DEVICE
45.	<u>05 - 150440(1993)</u>	PRODUCTION OF PHASE SHIFT MASK
46.	<u>03 - 157762(1991)</u>	LANGUAGE PROCESSOR
47.	<u>62 - 247480(1987)</u>	POSTPROCESSING SYSTEM FOR CHARACTER RECOGNITION
48.	<u>62 - 022188(1987)</u>	CHECKING SYSTEM FOR CONNECTION OF CHARACTER STRING

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n-gram and (syllab\* or mora)

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*Tai-Hsuan Ho; Kae-Cheng Yang; Kuo-Hsun Huang; Lin-Shan Lee;*  
Acoustics, Speech, and Signal Processing, 1998. ICASSP '98. Proceedings of the 1998 IEEE International Conference on , Volume: 2 , 12-15 May 1998  
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2 **A novel statistical language modelling method for continuous Chinese speech recognition**  
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Signal Processing Proceedings, 1998. ICSP '98. 1998 Fourth International Conference on , 1998  
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3 **A syllable-synchronous network search algorithm for word decoding in Chinese speech recognition**  
*Fang Zheng;*  
Acoustics, Speech, and Signal Processing, 1999. ICASSP '99. Proceedings., 1999 IEEE International Conference on , Volume: 2 , 15-19 Mar 1999  
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*Kawahara, T.; Doshita, S.;*  
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5 **Multi-scale-audio indexing for translingual spoken document retrieval**  
*Hsin-Min Wang; Meng, H.; Schone, P.; Chen, B.; Wai-Kit Lo;*  
Acoustics, Speech, and Signal Processing, 2001. Proceedings. 2001 IEEE International Conference on , Volume: 1 , 2001  
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6 **Vocabulary optimization based on perplexity**  
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7 **Heterogeneous lexical units for automatic speech recognition: preliminary investigations**  
*Bazzi, L.; Glass, J.;*  
Acoustics, Speech, and Signal Processing, 2000. ICASSP '00. Proceedings. 2000 IEEE International Conference on , Volume: 3 , 2000  
Page(s): 1257-1260 vol.3

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 Karen Kukich  
 ACM Computing Surveys (CSUR) December 1992  
 Volume 24 Issue 4  
 Research aimed at correcting words in text has focused on three progressively more difficult problems: (1) nonword error detection; (2) isolated-word error correction; and (3) context-dependent word correction. In response to the first problem, efficient pattern-matching and n-gram analysis techniques have been developed for detecting strings that do not appear in a given word list. In response to the second problem, a variety of general and application-specific spelling correction ...
- 2** Queries: Web question answering: is more always better? 100%  
 Susan Dumais, Michele Banko, Eric Brill, Jimmy Lin, Andrew Ng  
 Proceedings of the 25th annual international ACM SIGIR conference on Research and development in information retrieval August 2002  
 This paper describes a question answering system that is designed to capitalize on the tremendous amount of data that is now available online. Most question answering systems use a wide variety of linguistic resources. We focus instead on the redundancy available in large corpora as an important resource. We use this redundancy to simplify the query rewrites that we need to use, and to support answer mining from returned snippets. Our system performs quite well given the simplicity of the technique ...
- 3** Evaluation of a simple and effective music information retrieval method 97%  
 Stephen Downie, Michael Nelson  
 Proceedings of the 23rd annual international ACM SIGIR conference on Research and development in information retrieval: AQuly 2000  
 We developed, and then evaluated, a music information retrieval (MIR) system based upon the intervals found within the melodies of a collection of 9354 folksongs. The songs were converted to an interval-only representation of monophonic melodies and then fragmented into length-n subsections called n-grams. The length of these n-grams and the degree to which we precisely represent the intervals are variables analyzed in this paper. We constructed a collection of "musical word" data ...
- 4** Using n-grams for Korean text retrieval 97%  
 Joo Ho Lee, Jeong Soo Ahn  
 Proceedings of the 19th annual international ACM SIGIR conference on Research and development in information retrieval August 1996
- 5** Comparison of word-based and syllable-based retrieval for Tibetan (poster session) 91%  
 Paul G. Hackett, Douglas W. Oard  
 Proceedings of the fifth international workshop on Information retrieval with Asian languages November 2000  
 Tibetan retrieval based on automatically segmented words is compared with the use of overlapping syllable n-grams using a known-item retrieval evaluation. The optimal span of fixed-length n-grams is found to be 2 syllables, and indexing words is found to be as effective as indexing syllable bigrams.
- 6** Spoken dialogue technology: enabling the conversational user interface 85%  
 ACM Computing Surveys (CSUR) March 2002  
 Volume 34 Issue 1  
 Spoken dialogue systems allow users to interact with computer-based applications such as databases and expert systems by using natural spoken language. The origins of spoken dialogue systems can be traced back to Artificial Intelligence research in the 1950s concerned with developing conversational interfaces. However, it is only within the last decade or so, with major advances in speech technology, that large-scale working systems have been developed and, in some cases, introduced into commerce ...

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- 7** Information extraction for Thai documents 85%  
 Rattasit Sukhahuta , Dan Smith  
 Proceedings of the fifth international workshop on on Information retrieval with Asian languages November 2000

An increasing amount of electronically available information is stored in Asian language documents, which makes Information Retrieval (IR) and Information Extraction (IE) for these languages important for a large number of users. Analysis and extraction of information in these languages presents several interesting problems not seen in Western European languages; these are interesting in their own right and for the insights they can give into more general IR and IE techniques. We describe the ...

- 8** Content-based language models for spoken document retrieval 82%  
 Hsin-min Wang , Berlin Chen  
 Proceedings of the fifth international workshop on on Information retrieval with Asian languages November 2000

Spoken document retrieval (SDR) has been extensively studied in recent years because of its potential use in navigating large multimedia collections in the near future. This paper presents a novel concept of applying the content-based language models to spoken document retrieval. In an example task for retrieval of Mandarin broadcast news, the content-based language models either trained with the automatic transcriptions of the spoken documents or adapted from the baseline language models use ...

- 9** Building and using cultural digital libraries: Supporting access to large digital oral history archives 80%  
 Samuel Gustman , Dagobert Soergel , Douglas Oard , William Byrne , Michael Picheny , Bhuvana Ramabhadran , Douglas Greenberg  
 Proceeding of the second ACM/IEEE-CS joint conference on Digital libraries July 2002

This paper describes our experience with the creation, indexing, and provision of access to a very large archive of videotaped oral histories - 116,000 hours of digitized interviews in 32 languages from 52,000 survivors, liberators, rescuers, and witnesses of the Nazi Holocaust. It goes on to identify a set of critical research issues that must be addressed if we are to provide full and detailed access to collections of this size: issues in user requirement studies, automatic speech recognition, ...

- 10** Query expansion using phonetic confusions for Chinese spoken document retrieval 80%

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-  Yuk-Chi Li , Wai-Kit Lo , Helen M. Meng , P. C. Ching  
 Proceedings of the fifth international workshop on on Information retrieval with Asian languages November 2000


This paper presents a method of query expansion based on phonetic confusions for retrieving spoken documents using text queries. This method is applied to a Chinese spoken document retrieval task. A series of experiments have been carried out for Cantonese broadcast news documents using a multi-scale syllable-based retrieval approach. Our results show an improvement from AIR (average inverse rank) of 0.481 to 0.491 when we apply query expansion based on phonetic confusions to our retrieval task ...

- 11** Music digital libraries: Enhancing access to the levy sheet music collection: reconstructing full-text lyrics from syllables 77%  
 Brian Wingenroth , Mark Patton , Tim DiLauro  
 Proceeding of the second ACM/IEEE-CS joint conference on Digital libraries July 2002


The goal of the Lester S. Levy Sheet Music Collection, Phase Two project is to develop tools, processes, and systems that facilitate collection ingestion through automated processes that reduce, but not necessarily eliminate human intervention[1]. One of the major components of this project is an optical music recognition (OMR) system[2] that extracts musical information and lyric text from the page images that comprise each piece in a collection. It is often the case, as it is with the Levy Col ...

- 12** Spoken content metadata and MPEG-7 77%  
 J. P. A. Charlesworth , P. N. Garner  
 Proceedings of the 2000 ACM workshops on Multimedia November 2000

The words spoken in an audio stream form an obvious descriptor essential to most audio-visual metadata standards. When derived using automatic speech recognition systems, the spoken content fits into neither low-level (representative) nor high-level (semantic) metadata categories. This results in difficulties in creating a representation that can support both interoperability between different extraction and application utilities while retaining robustness to the limitations of the extraction ...

- 13** Two approaches for the resolution of word mismatch problem caused by English words and foreign words in Korean information retrieval 77%  
 Byung-Ju Kang , Key-Sun Choi  
 Proceedings of the fifth international workshop on on Information retrieval with Asian languages November 2000

In Korean text, recently, the use of English words with or without phonetic translation is growing at high speed. To make matters worse the Korean transliterations of an English word may be very various. The mixed use of English words and their various transliterations may cause severe word mismatch problem in Korean information retrieval. There can be two possible approaches, transliteration and back-transliteration method, to tackle the problem. We argue that our newly proposed transliterat ...

- 14** A practical query-by-humming system for a large music database 77%  
 Naoko Kosugi , Yuichi Nishihara , Tetsuo Sakata , Masashi Yamamuro , Kazuhiko Kushima  
Proceedings of the eighth ACM international conference on Multimedia October 2000

A music retrieval system that accepts hummed tunes as queries is described in this paper. This system uses similarity retrieval because a hummed tune may contain errors. The retrieval result is a list of song names ranked according to the closeness of the match. Our ultimate goal is that the correct song should be first on the list. This means that eventually our system's similarity retrieval should allow for only one correct answer.

The most significant improvement our system has ove ...

- 15** Is Huffman coding dead? (extended abstract) 77%  
 Abraham Bookstein , Shmuel T. Klein , Timo Raita  
Proceedings of the 16th annual international ACM SIGIR conference on Research and development in information retrieval  
July 1993

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